THE NORTH GERMAN EXPEDITION

Dr. Petermann's Account of the Exploration.

Payer and Weyprecht Penetrate Seventynine Degrees North.

The Arctic Ice Belt for the First Time Broken Through.

"Thermometric Gateways 10 the Pole."

Our readers have already had the startling intellience of the vertication of the famous open Polar ea by the present North German Arctic Expedi-The important tidings which the cable

The announcement has created in America deep tion and pleasure at the confirmation of countryman, Dr. Elisha K. Kune. No of geographical research has latterly rts have proved fruitless, the scientific world ch for it. The great African travellers, in seekng to find their way across the trackless sea of whitened bones and caronsses of the cara-that have perished in the passage. But it explorers seem determined to avoid the

Beary Budson, of Knickerbocker fame, down band of dauntiess followers, went forth with no ographical science to guide them, and were forced to feel their uncertain way amid ne long darkness of the polar regions and amid its

But while the fate of Franklin seemed a useless rifice it has now to be considered in a new light; was in the search for him and his comrades nat the great American explorer, Dr. Kane, pene en Polar Sea, which now bears his name. many years after the publication of Kane's entieman and an accomplished scholaranexpecting vision. It is not necessary to re-all that he saw. It is enough now to mention es within five hundred miles of the North d flowing with the regular tidal pulsation of the To reach it his party crossed a barrier nearly one hundred miles broad. Beak to the point of sixty degrees below zero. g this ice-locked region by travelling north roken sheet of water, stretching out pole as far as the eye could reach and ses. Its waves were said to be dashing on e: seals were sporting and water lowi were bung the scene, and the awe-struck explorers who had attained to this great discovery, on foot and with no means of navigating the open waters, were returned to the United States and reported the mag-

afficent results of their tons, the whole world was full of the story. The old European explorers that the honor of such a discovery was justly the

ingon Channel and had there seen the now well known and celebrated water sky, "the sire and anerring loken of an open Polar sea. Captain Penny arterwards sailed upon in. And the country sealed upon in. And in. And the country sealed upon in. And in. And the country sealed upon in. And myth.

But the question is no longer one of American veracity; if our late reports are correct it mas been transferred from the region of discussion and theory to that of accepted geographical fact.

The doctrine of an open Polar sea was never one of those vague and baseless theories or physical marves which ignorant men love to receive at the knade of the charitatians of sectione. It is deeply laid in the necessities and principles of geographical law, and resist upon the same basis as does the fact of oceanic crountainty, the trade winds and other great plenomena.

The loctrine of the foll Stream of the Atlantic in tempering the high laittides of that ocean, and during the greaty of the Guif Stream of the Atlantic in tempering the high laittides of that ocean, and during the progress of the United States Japan Expedition, mader Commodore Perry, a young and sagactous American officer, then Lieutenant States Bont, discovered an equal if not nobler Guif Stream in the Pacific. This latter had long been known to the Pacific. This latter had long been known to the Pacific. This latter had long been known to the Pacific. This latter had long been known to the Pacific. This latter had long the known to the Pacific. This latter had long the known to the Pacific. This latter had long the known to the Pacific Perry and the progress of the United States States and the progress of the Country of

clear of tee all the year round. This is due to the Gelf Stream, which sweeps around the North Cape an I so modifies the climate there that at some places by proceeding northward you enter a warmer region." Buchan has shown that "Shetland is benefited tharty-six degrees and London twenty degrees from their proximity to the warm water of the Atlantic." In Iceland and the Norwegnan coast," he aids, "the mercase thus accuring to the winter temperature is very much greater. To these nlaces the Atlantic may be conceived of as a vast repository of heat, in which the warmth of the summer months and the warmth of more souldern regions is treasured up and reserved against the rigor of winter." So much for the Guif Stream. Let us turn now to the Kuro Siwo, the other factor in the result claimed by the new theory for a thermometric approach to the Pole. The equatorial current of the Pacific is wider and grander even than that of the Atlantic, it is the parent stream out of which so many other bothes of water obtain their volume. It moves, as do all such currents of the ocean, on the line of a great circle, and this circle intersects the Equator at an acute angle of only a few degrees. It sweeps to the westward in "uninterrupted grandeur," as one expresses it, around three-eighths of the circumference of the globe, until divarted by the Continent of Asia and split noto immerable streams by the Polynesian Islands. Reaching the Ladrones, it imparts a much warmer climate than it has given to the Sandwich or Marquesas. The Philippines are made oppressively not even m win-

Map of the Origin of the Gulf Stream.



ter, and one familiar with it has said:—The fervor increases as we reach Malacca, is all aglow in India and becomes stiding in its intensity as these equatorial waters, after travelling 15,000 miles and being fully 300 days under a vertical sun, are thrown against the eastern shores of Africa.

In its course its pattway is atrewn with the marks of its thermal and climatic power. If the Guif Stream has clothed Ireland with its robe of verdure and made it the "Emerald isle," the Kuro Siwo has done much for the Aleutian Islands and Alaska. They are mantied with living green.

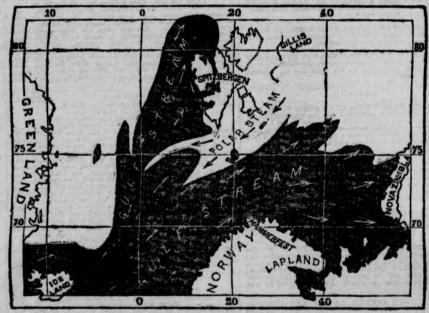
It is clear that the two great currents of hot water move with mighty thermal energy toward the Folar Basin. Analogy will show what effect they will have. If the current known as Humboldt's penetrates to the equator and cools its seas there to the delicious temperature of the Galapagos and Marquesas Islands why should not the Guil Stream plerce to the Pole with heat sufficient to preserve its waters from perpetual congelation?

If we are to believe the reports and records of Dr. Kane and Dr. Hayes, the open Polar Sea seen by their expeditions was in temperature above their ty six degrees Pahrenheit, and hence far above the renoperature at which sea water becomes a solid itwenty-eight degrees).

There certainly issues from the space around the Pole a ceaseless and mighty flow of waters to the

Noss (433) degrees east) still of a width equal to two degrees of latitude, and of a temperature of 54 degrees of latitude, and of a temporature of 54 degrees, cooling down at depths of thirty and alify lathoms, only from four to six degrees. West of the North Cape your figures are irresistible, but east of it your conclusions are very bold. You have been daring; nature is more so." Dr. Petermann himself writes:—

Our space forbids the multiplication of nundreds of additional recent instrumental observations demonstrating the passage of the Gulf stream (in the latitude of 80 and 81 degrees), with mighty and majestic movement, and with great quantities of neat



tropics. Its course is sadiy attested by the huge icebergs, upon which perhaps man / vessels, never heard from, have loundered. These by masses are often so numerous in floating clusters as to dely computation. Captain Beechy saw a small one fall from a glacier in Spitzoergen over 400,000 tons in weight. The Great Western, in 1841, in her transaliantic trip, met 300 techergs. Sir John Ross saw several aground in Bamn's Bay, in 260 fathous deep; one he computed to weigh 1,259,37,673 tons. A Danish voyager saw one measuring 300,000,000 cubic feet. Sir J. C. Ross met with some of these floating mountains twice as large as this; and in Davis Strait, where there is deep water, techergs have been met having an area of six square miles and six hundred feet high.

The hyperborean current which bears these monsters on its bosom has formed, by the deposit from their dissolution, the Grand Banks of Newfoundinad.

The hyperborean current which bears these monsters on its bosom has formed, by the deposit from their dissolution, the Grand Banks of Newfoundinald.

The single drift of ice which bore on its Atican shoulders the English ship Resolute, abandoned by Captain Kellott, and cast it twelve hundred miles to the south, was computed to be at least three hundred thousand square miles in area and seven feet in thickness. Such a field of rice would weigh eighteen billion tons. We say this was a single drift through Davis Straits, only one of the avenues of this current from the Pole and only a fractional part of the annual drift.

What a mighty and majestic flow of hot waters must take place from the equato: toward the poles to weige out and to bear down to low landades such terrific masses as easily as the piston of the fire engine ejects the jet deau!

The unbestiating inference drawn from such reasonings by those who accepted the narrative of Dr. Kabe and the reasoning of Captain Bent was that the proper route for reaching the Fole was the track of the Guif Stream into the Polar Essin.

EXTENSION OF THE GUIF STREAM.

The more recent investigations of the Swedish and German explorers have fully borne out the wisdom of this suggestion. They go to show that the Polar Basin is filled with water. Dr. Von Fresden, who has given such an admirable account of the first German North Polar Expedition of 1a68, says:—'I will state that the great depths of the sea north of Spitzbergen more than 2,001 fathoms, the strong and regular current there and the chare absence of recers islands in the Arctic Sea."

But the intest expeditions have thrown great light upon the extension of the Guif Stream in northleify and casterly direction, petwoon Nova Zembla and Spitzbergen, more than 2,001 fathoms, the strong and eginar current there and the chare absence of recers islands in the Arctic Sea."

But the intest expedition of the Guif Stream in northleify and casterly direction, petwoon hove zembla and east of the Thousand Isles qualitate fr nor

still remaining to it on its way to the Pole. If its pathway is strewn by floating lees the latter can be evaded by the dexterous scannar, just as Sir James C. Ross, in his Antarctic expedition of 1842, passed safely through the lee belt and ice islands of the South Pole.

In this country many were anxious that Captain Hall should test the Bent theory, now popularly known as that of the "Thermometric Galeways to the Pole." But it is, perhaps, better that Captain Hall should not have attempted it. To cross the seas between Spitzbergen and Nova Zembis should be attempted only by a thorough sailor, and one, like Sir James C. Ross, fully acquainted with ice belts. It look Sir James, when breaking through the ice belts around the South Pole, at one time not less than forty-six days—from the 18th of December, 1841, to the 2d of February, 1842—to work through an ice stream of about five hundred miles in which; but he was rewarded by finding on the other side a great open sea free of ice.

Modern geography is intensely interested in discovering what hes peyond that the belt crossed by Ross in the Antartic regions, which all navigators before him—Cook. Ealleay, and even Wiles—had believed and emphatically declared to be an impenetizable barrier to further progress toward the South Pole. According to common prejudice, he should have found a steady and progressive increase of ice and cold as he advanced poleward; but this was by no means the case, as Ross sagaciously anticipated. The builhant anticipations of Ross were not disappointed, and, after breaking through the ice wall which threw itself use or order atom the Pole, he found an open sea, in which he could sail without difficulty thousands of miles. In the first year, after energing from the ice belt, there was to be seen not a particular of the season of the discovery work day the gallant explorer descried victoria Land, which is only vicanic cones towering to the indistrebution of the discovery work day the gallant explorer descried victoria Land, which toly volum

it grows wider and wider, and it it received no afficent it should, as it expands in surface, diminish in depth. This is not found to be the case. It both widens and deepeus.

Judge Daly, it should be added, argues that the Guil Stream moves too slowly to reach the polar basin with any effect upon its loe; indeed, he represents this great "sea in motion" (as it has been called by Major Rennel) as stopping in mid ocean at the fortest parallel of north latitude. To sustain this remarkable assertion he quotes as his eminent authority the testimony of Mr. G. W. Blunt, who dogmatically informs us that "beyond the Western islands the Guil Stream has no existence;" that "the alleged effects of it on the climate of the British Islands are due to inventions, stupidities and assumptions;" that "the Sargossa Sea" (seen by Columbus and every other navigator frequenting the track of his sauge) "does not exist, and it another or these inventions," &c. It is a little singular that Mr. Blunt should be cited to prove what is a well known contradiction to sli that has been advanced by such English and American hydrographers as Herschel, fyndail, Buchan, Ansked, Rennel, Maury, Baobe, Henry and many others equally acute and eminent, and equally contradicts Judge Daly publishes this letter, he contradicts himself and his friend Mr. Blunt when he says:—"The fact that driltwood was found, together with vegetable productions of the West Indies, upon the northwest shore of Spitzbergen as high as eighty degrees north latitude, by the Swedish expeditions of 1861 and 1863, indicates that the Guil Stream reaches that far, but, as the officers of the last expedition in their report say, "in a greatly weakened state," and the orreunstance that bottles thrown overboard in the West Indies have been found upon the coast of Norway, together with the lact that there is a slow current slong that coast as far as the Bay of Varanger."

"This Swedish expedition," It is, however, an astonishing corroboration of Captain Bent's reasoning that Nordenskil

meantime mais the circuit of the islands, has in the meantime mais the circuit of the Gulf—after it issues from the Florida and Bemini straits. The width of this offshoot very greatly exceeds that of the Bemini current or the Gulf Stream proper. We say the Gulf Stream proper, although future explorations may show this to be a misnomer and may de anostrate that if the larger mass is entitled to give name to the current what is now known as the Gulf Stream shall be or ought to be denominated the Antilles Current. A study of the subject, we are convinced, will fix and settle the existence of such a northerly flow beyond a doubt. We believe it can be proved that such a mass of equatorial water, equal to the issue at Bennini, both in volume and velocity, moves to the northwest and enters the latter as a coefficient power. Although this question seems never to have entered into the investigations of navigators and hydrographers they have occasionally rendered, unconsciously, testimony which goes far to determine it. On his large physical chart of the Atlantic Alexander Keith Johnston has recorded, "Northwest branch of equatorial current of Atlantic; extends frequently to latitude twenty degrees north, sometimes to the polar limits of the northeast fradewinds." The longitude on this chart for this branch current is between the thirtness and forty-fifth meridians west of Green which, and its breadth is given as 600 miles—fully fitteen times as broad as the Gulf current at Bemini. (Keith Johnston. Plate XII., "Physical Atlas.") The same representation is made on the large and beautiful chart of the world (Mercator's, of Berghaus), published at Gotha. These two authorities would, if unsupported, give oredibility to the view now presented. Another evidence that the Bennini or Florida stream receives an immense acquisition on its way to Newfoundland is furnished by the deep-sea soundings of the United States Coast Survey. On its emergence from the Gulf of Mexico it has a breadth of fourteen leagues (forty-two miles) and a

PETERMANN'S ACCOUNT OF THE GERMAN EXPEDITION.

WASHINGTON, Nov. 2, 1871. Below is the full text of Dr. Petermann's circu'ar amounting the great discovery of Lieutenants Payer and Weyprecht in the high North. it will be published on this subject in anticipation of Dr. Petermann's circular, and corroborates the old American discoveries of Dr. Kane and the splendid theory of Captain Shas Bent, propounded in this country three years ago:-

CIRCULAR LETTER OF DR. AUGUSTUS PETERMANN.

GOTHA, Oct. 2, 1871.

You will recollect that the first impetus to the present polar explorations was given by the proposition of Captain Osborn, R. N., seven years ago, for a British expedition for explorate the central present polar explorations was given by the proposition of Captain Osborn, R. N., seven years ago, for a British expedition for exploring the central Arctic region, to proceed by way of Eatho's Bay and Smith's Sound, which was most earnestly advocated by the seagoing and scientific authorities of Great Britain, and was in a fair way of being entertained by the British government: but when I placed my views and projects before the latter, recommending the sea between East Greenhand and Nova Zemb'a as the bas s of Arctic expeditions, Captain Osborn's project was, after an exhausting discussion in four sittings of the Royal Society of London, rejected, and to my view the fullest appropalion accorded. Nothing, however, has since been done by the English, while Germany, through the generons contributions of her citizens, sent into these fields two national expeditions under Captain Koldewey, and, in addition, excensive explorations were made in the direction indicated by Dr. Dorst and Dr. Bessels, in Rossentand's vessel, and subsequently by Count Zeit and Von Heughlin at their own expense, and very important results reached, through which Norwegian fishermen were able to clear, some of them, fity-seven per cent over their pecuniary investment, and, moreover, to add the most valuable scientific observations, discoveries and surveys to our fund of information. Captain Koldewy has since expressed bimself, in regard to North Polar expeditions, entirely of the opinion of Captain Osborn, deeming Smith's Sound as the best route, but I do not believe that he will obtain the money for a German expedition on an English plan which has been rejected by the British authorities themselves, and for which he, moreover, believes two steamers, fitted out and provided for at least two years, will be indispensable. Already, during the second North German expedition, the most unpleasant differences are now greater than ever, as he has adopted the opposite of what i advocated, having gone over to Osborn and expressed himself publicly in

In a state grant consider an undertaking which mast end in a total failure, and I woold take part in suct an expedition only in case Dr. Petermann would accompany it in person.

Reasons for this opinion he does not give, but it seems Captain Koldewey does not think it necessary to give reasons for his views and assertions. How little Captain Koldewey's opinions are shared by other equally competent, experienced and scientific men is shown by the fact that, immediately after the publication of these opinions in May, an expedition left in Jone for the exploration of the very sea which Captain Koldewey would choose to visit only in my company, and that his own associate in the previous expedition, the highly distinguished Prist Licutenant Julies Paver, of the Austrian army, and that excellent naval officer, Licutenant Wyprecht, undertook it. Compared with Koldewey's last expedition it would have been unjust to deny to the courage and the scientific fervor of these genilemen the very highest appreciation. If even they had been less successful. They went with 76Fy poor means—in a small, hied Norwegian ashing vessel—while Koldewey had been provided with two of the Bnest vessels, fitted out luxuriously. He managed to penetrate, during two summers, only to seventy-five degrees thirty-one minutes north, a third of a degree higher than Clavering forty-seven degrees one minute north; while Lieutenants Payer and Wyprecht sailed in a small vessel through that much dreaded sea to seventy-nine degrees north.

The relegram of October 3, abnouncing the return of Payer and Wyprecht from the high north to Tromsoe reads verbaily as follows:—

In September, open sea, tolkowed from forty-two degrees to sixty degrees cast of Greenwich, beyond seventy-eight degrees are set of Greenwich, beyond seventy-eight degrees acts of the telegram is not entirely clear, but I have reason to conclude from it that King Carl's Land, discovered last year by Count Zeil and Von Heughlin, reaches southward to seventy-seven degrees twelve minutes north.

London and his late President, Sir Roderick I. Murchison.

The cruise and the discovery of Paver and Weypreent prove how little weight can be placed upon the views and assertions of Captain Rodewey, and also how much appreciation the undertaking of these explorers, their courage and their genuine setentials ardor, in the face of such errors deserves. The discovery is the more remarkable as all other things from the European Arctic thus far expressly state extraordinarily unfavorable conditions of weather and ice. It must be assumed that Payer and Weypreeth probably have penetrated through a belt of drift ice before they reached an open sea of eighteen degrees longitude in extent, and that they

THE WEATHER

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
WASHINGTON, D. C., NOV. 3.—1 A. M.
LOPSIS OF the Past Tro-nty-pur Hours.

The barometer has risen since Wednesday night in the Atlantic States, and to a less extent on the Lakes. Cloudy weather has continued from Lake Superior to Lake Etie and Northern New England; elsewhere partially cloudy or clear weather nas prevailed. The highest pressure remains in Tennessee and northward to Lake Michigan, with light northeasterly winds in the Southern and Guit States. Cloud and rain have prevailed on the coast of Oregon; clear weather in California.

An area of high parometer will probably move eastward over the Lower Lukes and Middle States, with northerly winds from Pennsylvania to New England; north easterly Partially clear and pleasant weather prevails in the thern and Guif States. The winds on the upper lakes veers to southwest, with increasing cloudiness, with a falling barometer and rising temperature. An area of low barometer is probably north

of Lake Superior and advancing southeast.

Wind.—Dangerous winds are not anticipated for our coasts to-night, unless possibly on Lake Su-

THE GRAND DUKE.

Appropriation for the Milleary Bands. The cause of discontent among the musicians attached to the various infantry regiments in New the principal members of the Executive Committee yesterday afternoon it was resolved to carry out the suggestions of Major Montgomery and General Aspinwall and make an appropriation for the musicians. The gentlemen forming the Committee on Music, consisting of Messrs. Barlow, Bergh, Duncan and General Shaier received a certain item, ample for the purpose, which they will distribute to the various musicians after the parade. Everything else being now settled, the Prince only is wanted.

No Military Parade Before the Election. HEADQUARTERS FIRST DIVISION N. G. S. N. Y.,
NEW YORK, NOV. 2, 1871.

TO THE EDITOR OF THE HERALD:
I am directed by Major General Shaler, commanding the
division, to ask you to announce, for the information of all
perso is interested, that no part of the First Division will be
ordered to parace for the reception of this imperied Bighness
the Grand Duke Alexis of Russia until after Tuesday next,
the 7th inst. Very respectfully,
THOMAS FAIRGRIEVE, Captain and A. D. C.

-ROYAL HAVANA LOTTERY.

OFFICIAL DRAWING OF OCTOBER 24, 1871.

APPROXIMATION PRIZES. Al de los \$160000 | Al de los \$26000 | Al de los \$16000 |
1074 | 51000 | 16445 | 6000 | 26600 | 6000 |
1074 | 1000 | 16448 | 500 | 26600 |
Prizes cashed and information furnished, and the highest rates paid for Deubloons, all kinds of Gold and Silves, Spanish Bank Buls, Government Securities, &c.
TAYLOR & CO., Bankers,
No. 16 Wall street, New York,

A. FOR PRENCH CHINA,

AT HALF PRICE,

French China Dinner Service for 12, \$17.
French China Tea Sets, 44 pleuca, \$5.50.
Gold Band Dinner Service for 12, \$33.
Gold Band Dinner Service for 12, \$33.
Gold Band Dinner Service for 12, \$33.
Gold Band Colored Band Tea Sets, 44 pieces, \$9.50.
Gobiets, fine quality, \$1 a dozen.
Frenc quality Linnove Dinner Service for 19, \$13.50.
French Jardinieres, with flower pot and flower, \$10.
ALSO a LARGE IMPORTATION of
French Bronzes, Clocks, Vasce, Parian Statuary,
Table Glass, Cultery and Plated Ware.
FOR WEDDING PRESENTS.

SAVE 50 PER CENT, AT J. MORTON & CO.'S. PRENCH ARCADE,

M. HOUSE, Altorney, 180 Broadway.

A BSOLUTE DIVORCES LEGALLY OBTAINED FROM the courts of different States. No publicity. Advisor free. Notary Public and Commissioner for every State. F. I. KING Connection at Law, 93 Broadway.

BARGAINS IN TEAS, COFFEES, GROCER168 AND Provisions; warranted to suit the palate and the possents of the million.

260 Greenwich Street, New York.

(ORNS, BUNIONS, NAILS, ENLARGED JOINTS, Warta, cured, without pain. RIOES ANNIHILATOR, cures corus, bunions, clablains, 26, by mail, 59c.

Dr. RICE, 210 Broadway, corner Fulton street.

PACHANGE, YOUR CASH OR ANY OTHER (GOOD value or pay by the week or month, for your furniture, Caroets and Sedding, at S. M. COWPERTHWATTS, 13) Chathang gires. An immediate shock and low prices.

circumstances is an impossibility.

The person should be kept on a whole diet, and all the medicines continued realored to it the natural quantity of fies

JOHN P. HENRY, No. 8 College place, New York, who said agent.

-ROYAL BAVANA LOTTERY. OFFICIAL DRAWING OF OCTOBER 24, 187L

> APPROXIMATION PRIZES.

INSURANCE COMPANY,

The insurance public are requested to read the following: - STATE OF NEW YORK.

In pursuance of the request of the INTERNATIONAL INRUBANCK COMPANY OF NEW YORK I have examined
its affairs and find its condition to be as follows:—
THE COMPANY I LAS assets securely invested and available to the amount of \$1.469,720,
Alter deducting or provining for all Habilities, INCLUDING REINBURANCE RESPERS and losses by the greatbre at Chicago, THE CAPITAL OF THE COMPANY,
\$100,000, IS WHOLLY UNINFAIRED. These facts are, ining judgment, anticion to satute the company to the centre;
Confidence of the public. public. GEORGE W. MILLER,
Superintendent Insurance Departs

NO MORE MEDICINE TRACE OF DYSPERSIA, Philais, Constipation, Distributes, Liver and Nervous Disorders, by DU HARRY'S desicious REVALIENTA ARABKA FOOD, which saves fifty times its cost in med cines. DU BARRY & CO., 18 Dey street, New York.

O - LUXURY, HRALTH, ECONOMY INSURED BY